

AMENDMENTS TO THE CLAIMS

This listing of the claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. – 8. (Canceled).

9. (Currently Amended) The A method according to claim 8, of processing a product comprising:

separating a raw material for the product from a workpiece comprising the raw material by forming a slit in the workpiece while leaving a micro joint connection connecting the raw material and the workpiece, wherein the slit is defined by an outer periphery of the raw material and an inner periphery of the workpiece, and wherein the micro joint connection is positioned within the slit;

positioning a portion of the raw material on a lower metal mold and bending the portion of the raw material downward at an angle greater than 90° using an upper metal mold and the lower metal mold, while maintaining the micro joint connection between the raw material and the workpiece, and wherein the upper metal mold comprises:

a punch chip attached to a lower surface of a vertically movable punch body, wherein the punch chip is movable to a first side with respect to the punch body,

and wherein the punch chip comprises a protruding bending process portion provided at a lower end of the punch chip so as to protrude to the first side; and

dropping the product by separating the micro joint connection between the raw material and the workpiece.

10. (Previously Presented) The method according to claim 9,

wherein the portion of the raw material is bent downward greater than 90° as the punch chip moves to the first side with respect to the punch body as the punch body is moved vertically.

11. (Previously Presented) The method according to claim 9,

wherein the upper metal mold further comprises:

a pressure moving mechanism configured to move the punch chip to the first side when the punch body moves vertically.

12. (Previously Presented) The method according to claim 11,

wherein the pressure moving mechanism comprises:

an inclined surface of the punch chip provided on a second side opposite the first side; and

a punch chip pressing member provided in a lower portion of a punch guide, wherein the pressing member is configured to slide with the inclined surface of the punch chip.

13. (Currently Amended) The A method according to claim 7, of processing a product comprising:

separating a raw material for the product from a workpiece comprising the raw material by forming a slit in the workpiece while leaving a micro joint connection connecting the raw material and the workpiece, wherein the slit is defined by an outer periphery of the raw material and an inner periphery of the workpiece, and wherein the micro joint connection is positioned within the slit;

positioning a portion of the raw material on a lower metal mold and bending the portion of the raw material downward using an upper metal mold and the lower metal mold, while maintaining the micro joint connection between the raw material and the workpiece, wherein the lower metal mold comprises:

a die main body comprising a die hole; and

a plurality of bending process edges provided at a plurality of positions in an inner peripheral edge of the die hole, wherein

the portion of the raw material bent downward is bent downward along one of the bending process edges, wherein

the micro joint connection between the raw material and the workpiece is separated along one of the bending process edges, and wherein

each of a plurality of dimensions from a center of the die hole to the plurality of bending process edges is differentiated so as to correspond to a plurality of different workpieces having different thicknesses; and

dropping the product by separating the micro joint connection between the raw material and the workpiece.

14. (Currently Amended) The A method according to claim 7, wherein the portion of the raw material is bent of processing a product comprising:

separating a raw material for the product from a workpiece comprising the raw material by forming a slit in the workpiece while leaving a micro joint connection connecting the raw material and the workpiece, wherein the slit is defined by an outer periphery of the raw material and an inner periphery of the workpiece, and wherein the micro joint connection is positioned within the slit;

positioning a portion of the raw material on a lower metal mold and bending the portion of the raw material downward into a die hole of a die main body using an upper metal mold and the lower metal mold, while maintaining the micro joint connection between the raw material and the workpiece; and

dropping the product by separating the micro joint connection between the raw material and the workpiece.

15. (Previously Presented) The method according to claim 14,

wherein the portion of the raw material is bent downward along a bending process edge of the die hole.

16. (Previously Presented) The method according to claim 15,

wherein the bending process edge is provided as an inclined surface of the die hole of the die main body.

17. (Currently Amended) ~~The A method according to claim 7, of processing a product comprising:~~

separating a raw material for the product from a workpiece comprising the raw material by forming a slit in the workpiece while leaving a micro joint connection connecting the raw material and the workpiece, wherein the slit is defined by an outer periphery of the raw material and an inner periphery of the workpiece, and wherein the micro joint connection is positioned within the slit;

positioning a portion of the raw material on a lower metal mold and bending the portion of the raw material downward using an upper metal mold and the lower metal mold, while maintaining the micro joint connection between the raw material and the workpiece, wherein the micro joint connection between the raw material and the workpiece is separated by bending the raw material downward along a bending process edge of a die hole of a die main body; and

dropping the product by separating the micro joint connection between the raw material and the workpiece.

18. (Previously Presented) A method of processing a product, comprising:

separating a raw material for the product from a workpiece comprising the raw material by forming a slit in the workpiece while leaving a micro joint connection connecting the raw material and the workpiece;

positioning a portion of the raw material on a lower metal mold and bending the portion of the raw material downward at an angle greater than 90° using an upper metal

mold and the lower metal mold, while maintaining the micro joint connection between the raw material and the workpiece,

the upper metal mold comprising a punch chip attached to a lower surface of a vertically movable punch body, wherein the punch chip is movable to a first side with respect to the punch body, wherein the punch chip comprises a protruding bending process portion provided at a lower end of the punch chip so as to protrude to the first side and a pressure moving mechanism configured to move the punch chip to the first side when the punch body moves vertically,

the pressure moving mechanism comprising an inclined surface of the punch chip provided on a second side opposite the first side and a punch chip pressing member provided in a lower portion of a punch guide, wherein the pressing member is configured to slide with the inclined surface of the punch chip; and

dropping the product by separating the micro joint connection between the raw material and the workpiece.

19. (Previously Presented) A method of processing a product, comprising:

separating a raw material for the product from a workpiece comprising the raw material by forming a slit in the workpiece while leaving a micro joint connection connecting the raw material and the workpiece;

positioning a portion of the raw material on a lower metal mold and bending the portion of the raw material downward using an upper metal mold and the lower metal mold, while maintaining the micro joint connection between the raw material and the workpiece,

the lower metal mold comprising a die main body comprising a die hole and a plurality of bending process edges provided at a plurality of positions within an inner peripheral edge of the die hole, wherein the portion of the raw material bent downward is bent downward along one of the bending process edges, wherein the micro joint connection between the raw material and the workpiece is configured to be separated along one of the bending process edges, and wherein each of a plurality of dimensions from a center of the die hole to the plurality of bending process edges is differentiated so as to correspond to a plurality of different workpieces having different thicknesses; and

dropping the product by separating the micro joint connection between the raw material and the workpiece.

20. (Previously Presented) A method of processing a product, comprising:

separating a raw material for the product from a workpiece comprising the raw material by forming a slit in the workpiece while leaving a micro joint connection connecting the raw material and the workpiece;

positioning a portion of the raw material on a lower metal mold and bending the portion of the raw material downward using an upper metal mold and the lower metal mold, while maintaining the micro joint connection between the raw material and the workpiece, wherein the micro joint connection between the raw material and the workpiece is configured to be separated by bending the raw material downward along a bending process edge of a die hole of a die main body; and

dropping the product by separating the micro joint connection between the raw material and the workpiece.